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EXAMINER	
LAROSE, COLIN M	

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/911,954	YOUNGERS, KEVIN J.	
	Examiner	Art Unit	
	Colin M. LaRose	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Arguments and Amendments

1. Applicant's amendments and arguments filed 2 November 2004, have been entered and made of record.

Response to Amendments and Arguments

2. Applicant's arguments filed 2 November 2004 have been fully considered but they are not persuasive.

3. Regarding claim 1, Applicant argues (see p.9 of Remarks) that Sobol does not apply the matrix to a plurality of color components to create a single output color component. However, Examiner maintains that this limitation is disclosed by Sobol. Referring to column 4, lines 30-37 of Sobol, Sobol's matrix is applied to each of the RGB color components of an image to create an output for each of the RGB color components. Thus, Sobol does apply the matrix to a plurality of color components ... to create "an output color component." It is irrelevant that Sobol produces three outputs, one for each RGB color component, since the claim only requires there to be a single color component to be output and does not preclude more than one.

Applicant's arguments are essentially the same for claims 4-27, and the above remarks are applicable to those claims as well.

Regarding claim 14, Applicant alleges that Sobol does not interpolate, as claimed. However, Examiner maintains the interpretation that Sobol does disclose the claimed interpolation. A general allegation that a reference does not meet a claimed limitation, absent persuasive reasoning, does not overcome the previous rejection. See 37 CFR 1.111(b).

Claim Objections

4. In view of Applicant's amendments, the previous objections of claims 15-22 and 26 have been withdrawn.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-20, 22-24, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,854,859 by Sobol.

Regarding claim 1, Sobol discloses a method of processing color image data, comprising:

(a) examining the color components of a pixel in the image (column 2, lines 14-25: pixels are examined to determine whether they are of higher intensity or lower intensity; Sobol's method is applicable on pixels with color components (column 4, lines 30-37));

(b) selectively applying a matrix to the color components of the pixel to create an output color component only when the pixel is not in a dark area of the image (column 2, lines 14-25: pixels with low intensity are not filtered with the Laplacian matrix (see column 2, lines 56-68)).

Regarding claim 2, Sobol's method is repeated for each pixel in the image (i.e. the entire image is filtered).

Regarding claim 3, Sobol discloses blending the transition between pixels in the image that are in a dark area and pixels in the image that are not in a dark area (figure 1C: pixels with high values are strongly filtered; pixels with low values are not/weakly filtered; and pixels in the mid-range are filtered by a mid-range filter, so that the transition from strong to weak filtering is blended).

Regarding claim 4, Sobol discloses a method of processing color image data contained in an array of pixels, comprising:

selecting at least one threshold (column 4, lines 24-30: a threshold of 60 is selected);

(a) reading the color components of a pixel (column 2, lines 14-25: pixels are examined to determine their relationship to the threhsold; Sobol's method is applicable on pixels with color components (column 4, lines 30-37));;

(b) transforming the color components of the pixel with a matrix when any of the color components of the pixel are greater than the threshold and otherwise preserving the pixel (column 4, lines 24-30: pixels below the threshold of 60 are not filtered).

Regarding claim 5, Sobol's method is repeated for essentially each pixel in the array (i.e. the entire image is filtered).

Regarding claim 6, Sobol discloses a method of processing color image data contained in an array of pixels, comprising:

(a) defining at least one threshold (column 3, lines 45-53: a threshold of 10 is selected);

(b) defining a first and a second matrix (column 3, lines 45-53: two matrices with different K values of 8 and 4 are defined according to the Laplacian equation at column 2, lines 66-67);

(c) reading at least 3 color components for the pixel (column 4, lines 31-37: R, G, and B color components are read for each pixel);

(d) applying the first matrix to the color components of the pixel to create an output color component when any of the color components are greater than the threshold (column 3, lines 45-55: a first matrix with K=4 is applied when the color component values are above the threshold of 10), and;

(e) otherwise applying the second matrix to the color components of the pixel to create the output color component (column 3, lines 45-55: a second matrix with K=8 is applied when the color component is not greater than 10).

Regarding claim 7, Sobol's method is repeated for each pixel in the image (i.e. the entire image is filtered).

Regarding claim 8, Sobol teaches repeating the method to create a new output color component for each of the color components in the color image (column 4, lines 31-37: method is carried out for each of the color components).

Regarding claim 9, Sobol discloses a different threshold is used to create each output color component in the color image (column 3, lines 45-55 and column 4, lines 13-30: Sobol teaches that the thresholds for the color components can be different from 10 and can take on any of a number of other values: 20, 30, 40, 60, 80, etc.).

Regarding claim 10, Sobol discloses there are different matrices for creating each output color component in the color image (column 2, lines 55-67: the K parameter can be assigned to any desired value to generate any of numerous different matrices).

Reagrding claim 11, Sobol teaches the threshold is approximately 10 eight bit counts (column 3, lines 45-55: the threshold is 10).

Regarding claim 12, Sobol teaches the threshold is approximately 6 eight bit counts (column 3, lines 45-55: the threshold is 10, which is substantially close to 6).

Regarding claim 13, Sobol discloses a scanner (figure 2), comprising:

a photo-sensor array for converting an image into an electrical signal (200, figure 2);

an A-to-D converter to convert the electrical signal into raw digital data (204, figure 2);

a matrix for transforming the raw digital data for color components for each of a plurality of pixels into a corrected color component for that pixel (column 2, lines 55-67; column 4, lines 30-37);

the scanner configured to output the corrected color component for that pixel only when the raw digital data for at least one of the color components of that pixel is greater than a pre-selected value (column 2, lines 17-19; column 4, lines 30-37: color components with low intensity receive no filtering; color components with high intensity receive filtering).

Regarding claim 14, Sobol discloses a method of processing color image data contained in an array of pixels, comprising:

defining a first threshold (30) and a second threshold (10), where the first threshold is larger than the second threshold (see column 3, lines 45-55);

defining a first and a second matrix (column 3, lines 45-55: first matrix is a Laplacian with K=1; second matrix is a Laplacian with K=8);

(a) reading the color components of a pixel (column 4, lines 31-37: R, G, and B color components are read for each pixel);

(b) applying the first matrix to the color components of the pixel when any color component is greater than the first threshold (column 3, lines 45-55: first matrix (K=1) is applied when color component is above the first threshold of 30);

(c) applying the second matrix to the color components of the pixel when all the color components of the pixel are less than the second threshold (column 3, lines 45-55: second matrix (K=8) is applied when color component is below the second threshold of 10), and;

(d) otherwise applying an interpolation between the first and second matrix to the color components of the pixel (figure 1C: pixels with high values are strongly filtered; pixels with low values are not/weakly filtered; and pixels in the mid-range are filtered by a mid-range filter, so that the transition from strong to weak filtering is blended, or interpolated);

repeating steps (a) through (d) for each pixel in the array (i.e. for Sobol's system, the entire image is filtered).

Regarding claim 15, Sobol discloses a method of processing data contained in an array of pixels, comprising:

defining a threshold (column 3, lines 45-55: a threshold of 20);

defining a range around the threshold, the range having a top end and a bottom end (column 3, lines 45-55: top end of 30; a bottom end of 10);

defining a matrix (column 2, lines 55-67: Laplacian matrix is defined);

(a) reading the color components of a pixel (column 4, lines 31-37: R, G, and B color components are read for each pixel);

(b) applying the matrix to the color components of the pixel when any of the color components are above the top end of the range (column 3, lines 45-55: when the color component is above 30, then the Laplcian with K=1 is applied);

(c) modifying the color components of the pixel by interpolation when all of the color components are below the top end of the range and at least one color component is above the bottom end of the low range (figure 1C: pixels with high values are strongly filtered; pixels with low values are not/weakly filtered; and pixels in the mid-range are filtered by a mid-range filter, so that the transition from strong to weak filtering is blended, or interpolated, when at least one color component is above the bottom end of the range) and;

otherwise preserving the pixel (i.e. color components below the bottom end of the range are subjected to no filtering (or very weak filtering), so that they are substantially preserved).

Regarding claim 16, Sobol discloses repeating the steps (a) through (c) for each pixel value in the array (i.e. the entire image is filtered).

Regarding claim 17, Sobol discloses steps (a) through (c) are repeated to create a new output color component for each of the color component in the color image (column 4, lines 31-37: method is carried out for each of the color components).

Regarding claim 18, Sobol discloses a different threshold is used to create each output color component in the color image (column 3, lines 45-55 and column 4, lines 13-30: Sobol teaches that the thresholds for the color components can be different from 30 and can take on any of a number of other values: 20, 40, 60, etc.).

Regarding claim 19, Sobol discloses there are different matrices for creating each output color component in the color image (column 2, lines 55-67: the K parameter can be assigned to any desired value to generate any of numerous different matrices).

Reagrding claim 20, Sobol teaches the threshold is approximately 10 eight bit counts (column 3, lines 45-55: the threshold is 10).

Regarding claim 22, Sobol teaches the threshold is approximately 6 eight bit counts (column 3, lines 45-55: the threshold is 10, which is substantially close to 6).

Regarding claim 23, Sobol discloses a scanner (figure 2), comprising:

a photo sensor array for converting an image into an electrical signal (200, figure 2);

an A-to-D converter to convert the electrical signal into raw digital data (204, figure 2);

a first matrix and a second matrix, both matrixes for transforming the raw digital data for color components for each of a plurality of pixels into a corrected color component for that pixel (column 3, lines 45-55: first matrix is Laplacian of K=1; second matrix is Laplacian of K=-2);

the scanner configured to create the corrected color component for that pixel by selecting between the first and second matrix as a function of the raw digital data value (column 3, lines 45-55; column 4, lines 30-37: the first matrix and second matrix are selectively applied based on the value of the color components).

Regarding claim 24, Sobol discloses a computer readable medium (processor 208, figure 2 processes instructions) containing a program for adjusting the data from the color components for pixels in a color image, comprising:

a matrix (column 2, lines 55-67: Laplacian matrix);

the program configured to modify the data from a color component for a pixel of the color image based on the data for the color components for the pixel using the matrix only when the data from at least one of the color components for the pixel is above a predetermined value (column 2, lines 17-20; column 4, lines 30-37: filtering is only applied when a color component value is sufficiently high).

Regarding claim 27, Sobol discloses a method of processing color image data contained in an array of pixels, comprising:

(a) defining at least three thresholds (column 3, lines 45-55: threshold of 10 is set; column 4, lines 31-37: each color components is processed separately, so a threshold of 10 exists for each of the three color components);

(b) defining a first and a second matrix (column 3, lines 45-55: a Laplacian matrix with K=4 is a first matrix, and a Laplacian matrix with K=8 is a second matrix);

(c) reading at least 3 color component for a pixel (column 4, lines 31-37: R, G, and B color components are read for each pixel);

(d) applying the first matrix to the color components of the pixel to create an output color component when the first color component is larger than the first threshold or the second color

component is larger than the second threshold or the third color component is larger than the third threshold (column 3, lines 45-55: if the first color component is greater than 10, then the first matrix (K=4) is applied to the color component; the same process is carried out for the second and third color components), and;

(e) otherwise applying the second matrix to the color components of the pixel to create the output color component (column 3, lines 45-55: if the first color component is less than 10, then the second matrix (K=8) is applied to the color component; the same process is carried out for the second and third color components);

(f) repeating steps (c) through (e) for each pixel in the array (i.e. the entire image is filtered).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobol.

Sobol discloses substantially the claimed invention as discussed above for claim 15.

Sobol does not disclose expressly the range is approximately 2 eight bit counts.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to utilize a range of 2 eight bit counts. Applicant has not disclosed that this feature provides an advantage, is used for a particular purpose or solves a stated problem. One of

ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the range disclosed by Sobol because both ranges perform the same function of designating intensity regions where different filtering is performed. Therefore, it would have been obvious to one of ordinary skill in this art to modify Sobol to obtain the invention as specified in claim 21.

9. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobol in view of U.S. Patent 5,214,470 by Denber.

Regarding claims 25 and 26, Sobol discloses a camera (figure 2), comprising:

a photo sensor (200, figure 2);

a matrix for mapping image data (column 2, lines 55-67: Laplacian matrix); and

a processor configured to map color components of the image data only when the image data from at least one color component exceeds a predetermined value (208, figure 2 and column 2, lines 17-20; column 4, lines 30-37: filtering is only applied when a color component value is sufficiently high).

Sobol does not expressly disclose the camera comprises a lens system that forms an image on the photo sensor.

Denber discloses a lens (20, figure 1) for forming images on a photsensor (22, figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sobol by Denber to include a lens, since a lens allows light to be focused onto photosensor, thereby allowing an electronic image to be captured.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (703) 306-3489. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (703) 306-0377.

VIKRAM BALI
PRIMARY EXAMINER

CML
Group Art Unit 2623
9 February 2005